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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|---------------------|------------------|
| 10/783,034      | 02/23/2004  | Rudy Jan Maria Pellens | 081468-0308407      | 3791             |

909 7590 11/02/2007  
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| EXAMINER |
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QUINTO, KEVIN V

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| ART UNIT | PAPER NUMBER |
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2826

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| MAIL DATE | DELIVERY MODE |
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11/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/783,034 | <b>Applicant(s)</b><br>PELLENS, RUDY JAN MARIA |  |
|                              | <b>Examiner</b><br>Kevin Quinto      | <b>Art Unit</b><br>2826                        |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20,21 and 25 is/are allowed.
- 6) ☒ Claim(s) 1-5,8-12,14,15 and 24 is/are rejected.
- 7) ☒ Claim(s) 6,7,13 and 16-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>15 August 2007</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-19, 23, and 24 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 9 recites "ARCH 8250" as the second layer material. ARCH is a registered trademark. The claim scope is uncertain since the trademark or trade name cannot be used to properly identify any particular material or product. "ARCH 8250" is also a product name from Arch Chemicals. Product names and its compounds/compositions are susceptible to change over time; therefore further rendering the claim indefinite.
5. Claim 9 recites "GKRS 6202" as the first layer material. The examiner is unable to determine the metes and bounds of this claim since no data sheet has been provided for this material (only datasheets for GKR6102 and GKR-6203A2 have been provided). Furthermore, this limitation is a product name from Arch Chemicals. Product names

and its compounds/compositions are susceptible to change over time; therefore further rendering the claim indefinite.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, 8, 10, 11, 12, 14, 15, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (USPN 5,930,610).

8. In reference to claim 1, Lee (USPN 5,930,610) discloses a device manufacturing method which meets the claim. Figures 1a-1e illustrate a substrate (1) with a first layer of electromagnetic radiation sensitive material (2) provided on it. A second layer of electromagnetic radiation sensitive material (3) is provided on the first layer of radiation sensitive material (32). The first (2) and second (3) layers of electromagnetic radiation sensitive material have a same tonality. The first layer of radiation sensitive material (2) is of a different material than the second layer of radiation sensitive material (3). Figure 1b shows that a beam of electromagnetic radiation is provided using an illumination system. The beam of radiation is imparted with a desired pattern in its cross-section by employing a patterning device and projected onto a target portion of the substrate (1) to expose both the first (2) and second (3) layers of radiation sensitive material. Lee does not explicitly state that the first layer of radiation sensitive material (2) has a dose size of

at least approximately 1.5 times the magnitude of the dose size of the second layer of radiation sensitive material (3). However it is clear that the first layer of radiation sensitive material (2) has a dose size which is greater than that of the dose size of the second layer of radiation sensitive material (3) since the exposed portion of the second layer of radiation sensitive material (3) is greater than the exposed portion of the first layer of radiation sensitive material (2) after a single exposure step (see figure 1c). The examiner would like to note:

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Therefore claim 1 is not patentably distinguishable over the Lee reference.

9. With regard to claim 2, Lee does not explicitly state that the first layer of radiation sensitive material (2) has a dose size of at least approximately 1.5 times to 2.5 times the magnitude of the dose size of the second layer of radiation sensitive material (3). However it is clear that the first layer of radiation sensitive material (2) has a dose size which is greater than that of the dose size of the second layer of radiation sensitive material (3) since the exposed portion of the second layer of radiation sensitive material (3) is greater than the exposed portion of the first layer of radiation sensitive material (2) after a single exposure step (see figure 3D). The examiner would like to note:

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Therefore claim 2 is not patentably distinguishable over the Lee reference.

10. In reference to claim 3, the first layer (2) is thinner (column 1, lines 35-37) than the second layer (3).

11. With regard to claim 4, Lee discloses that the first layer (2) is 0.1 microns or 100 nm and the second layer (3) is 0.9 microns 900 nm.

12. In reference to claim 5, the first and second materials are substantially immiscible.

13. With regard to claim 8, the first and second materials have different solvents.

14. With regard to claim 10, the first (2) and second (3) layers are positive radiation sensitive.

15. In reference to claim 11, the first (2) and second (3) layers are developed to remove portions which are exposed.

16. With regard to claim 12, the removed portion of the first layer (2) is smaller than the removed portion of the second layer (3).

17. In reference to claim 14, a first layer of metal (4a) is deposited onto the substrate (31).

18. With regard to claim 15, the first (2) and second (3) layers are lifted off to leave a T-gate (4a) on the substrate (1).

19. In reference to claim 24, the method is a process for the manufacture of an integrated circuit having a T-gate.

20. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (USPN 5,930,610) in view of Ahmed et al. (United States Patent Application Publication No. US 2004/0056304 A1).

21. With regard to claim 23, Lee does not disclose the use of GaAs, GaN, or InP as the substrate material. However Ahmed et al. (United States Patent Application

Publication No. US 2004/0056304 A1, hereinafter referred to as the "Ahmed" reference) discloses that these materials are well known semiconductor substrate materials (p. 2, paragraph 27). The applicant is reminded in this regard that it has been held that mere selection of known materials generally understood to be suitable to make a device, the selection of the particular material being on the basis of suitability for the intended use, would be entirely obvious. In re Leshin 125 USPQ 416. Therefore claim 23 is not patentable over the Lee and Ahmed references.

22. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (USPN 5,930,610) in view of Kazama et al. (United States Patent Application Publication No. US 2002/0034872 A1).

23. With regard to claim 23, Lee does not disclose the use of SiGa as the substrate material. However Kazama et al. (United States Patent Application Publication No. US 2002/0034872 A1, hereinafter referred to as the "Kazama" reference) discloses that this material is a well known semiconductor substrate material (p. 7, paragraph 103). The applicant is reminded in this regard that it has been held that mere selection of known materials generally understood to be suitable to make a device, the selection of the particular material being on the basis of suitability for the intended use, would be entirely obvious. In re Leshin 125 USPQ 416. Therefore claim 23 is not patentable over the Lee and Kazama references.

***Allowable Subject Matter***

24. Claims 20, 21, and 25 are allowed.

25. Claims 6, 7, 13, and 16-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

26. The following is a statement of reasons for the indication of allowable subject matter: the examiner is unaware of any prior art which suggests or renders obvious a device manufacturing method for a substrate having two layers of electromagnetic radiation sensitive materials having the explicit dose size and chemical properties as described by the applicant.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

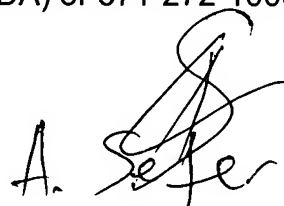


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KVQ

  
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